HAPAS

Meon Ltd
Railside
Northarbour Spur
Portsmouth PO6 3TU

Tel: 0808 118 1922
e-mail: mail@meonuk.com
website: www.meonuk.com

HAPAS Certificate
18/H277
Product Sheet 1

MEON CRACK SEALING SYSTEMS FOR HIGHWAYS

MAGMA THERMABAND R172 PREFORMED OVERBANDING SYSTEM

This HAPAS Certificate Product Sheet(1) is issued by the British Board of Agrément (BBA), supported by Highways England (HE) (acting on behalf of the Overseeing Organisations of the Department for Transport; Transport Scotland; the Welsh Assembly Government and the Department for Infrastructure, Northern Ireland), the Association of Directors of Environment, Economy, Planning and Transport (ADEPT), the Local Government Technical Advisers Group and industry bodies. HAPAS Certificates are normally each subject to a review every three years.
(1) Hereinafter referred to as 'Certificate'.

This Certificate relates to the Magma Thermaband R172 Preformed Overbanding System, a preformed thermoplastic tape used to seal and repair cracks, fretted joints and reinstatement joints in non-porous bituminous and concrete highway surfaces.

CERTIFICATION INCLUDES:

- factors relating to compliance with HAPAS requirements
- factors relating to compliance with Regulations where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Performance — the system meets the relevant requirements for overband crack-sealing systems of the *Guidelines Document for the Assessment and Certification of Crack Sealing Systems for Highways* (see section 6).

Durability — the system can be used to repair cracks, fretted joints and reinstatement joints in both longitudinal and transverse directions of the carriageway with a minimum life expectancy of five years (see section 8).

The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 14 May 2018

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

The BBA is a UKAS accredited certification body – Number 113.
The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Requirements

In the opinion of the BBA, the Magma Thermaband R172 Preformed Overbanding System, when assessed in accordance with the *Guidelines Document for the Assessment and Certification of Crack Sealing Systems for Highways*, and used in accordance with the provisions of this Certificate, will meet or contribute to meeting the requirements of the *Manual of Contract Documents for Highway Works* (MCHW)(1), Volume 1 *Specification for Highway Works*, Series 700, clause 711 and Volume 2 *Notes for Guidance on the Specification for Highway Works*, Series NG700, clause NG711.

(1) The MCHW is operated by the Overseeing Organisations: Highways England (HE), Transport Scotland, the Welsh Assembly Government and the Department for Infrastructure (Northern Ireland).

Regulations

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2 and 3.6) of this Certificate.

Technical Specification

1 Description

1.1 The Magma Thermaband R172 Preformed Overbanding System is an anti-skid crack repair system supplied as a preformed, torch-applied layer. The system is available in rolls nominal 3 mm thick, 35 to 39 mm wide and 5 m lengths.

1.2 The Magma Thermaband R172 Preformed Overbanding System must be used with a suitable primer on concrete surfaces.

2 Manufacture

2.1 The system comprises an extruded thermoplastic binder, dressed with factory applied anti-skid glass aggregate.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control being operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 The overbanding tape is supplied in cardboard boxes, typically containing 9 rolls. Each box is marked with the Certificate holder's name, the name of the component and the BBA identification mark incorporating the number of this Certificate.

3.2 The overbanding tape should be kept in its original packaging until ready for use, and protected against sunlight and moisture. It must be kept dry during storage, in transit and in use. It should be stored flat and at temperatures above 1°C but not exceeding 40°C.

3.3 Extra care must be taken when handling the overbanding tape in low temperatures (usually below 10˚C), as it will be less flexible. Unrolling and cutting of the tape will be easier if it can be maintained at temperatures in excess of this.

3.4 If stored correctly in unopened boxes, in accordance with the Certificate holder's instructions, the tape will have a storage life of at least 12 months from the date of manufacture.

3.5 The Certificate holder has taken the responsibility of classifying and labelling the overbanding tape under the *CLP Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

3.6 Where required the primer is supplied by Meon Ltd in aerosols or metal pails. The primer must be stored, handled and applied in accordance with the manufacturer's instructions.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Magma Thermaband R172 Preformed Overbanding System.

Design Considerations

4 Use

The Magma Thermaband R172 Preformed Overbanding System is satisfactory for use as an overbanding and sealing system for the repair of cracks, fretted joints and reinstatement joints up to 5 mm wide in non-porous bituminous highway surfaces(1) with texture depths not exceeding 2 mm, or on concrete highway surfaces.

(1) For the purpose of this Certificate, non-porous bituminous highway surfaces are impermeable and include hot-rolled asphalt, asphalt concrete, mastic asphalt and thin surfacing systems.

5 Practicability of installation

The system is designed to be installed by a competent highways contractor experienced with this type of system, in accordance with the requirements of this Certificate and the Certificate holder's installation details.

6 Performance

The results of laboratory performance tests carried out on the system complied with the requirements of the Guidelines Document for overbanding and sealing systems (see Table 1 of this Certificate). This includes the minimum initial and investigatory skid resistance values of 60 and 50 respectively.

7 Maintenance

Installations must be periodically inspected as part of a planned maintenance programme and, if necessary, repaired as described in section 12.

8 Durability

8.1 The system can be used to seal and repair cracks in both longitudinal and transverse directions of the carriageway, with a minimum expected life of five years.

8.2 Where cracks have penetrated substantially through the pavement depth owing to a structural failure, resulting in significant movement under traffic, an expectation of life cannot be predicted. Where pavements are structurally sound, with cracking confined to the surfacing layer or layers, and these remain bonded to the road-base, the five-year minimum life should be achieved.

8.3 The most severe wear from trafficking (primarily by heavy goods vehicles) occurs within the wheel track zones, approximately between 0.5 and 1.1 m and between 2.55 and 3.15 m from the centre of the nearside lane markings for each traffic lane. In the wheel track zones, the expected minimum life is unlikely to be exceeded. Conversely, for cracks outside the wheel track zones, provided the pavement surface is otherwise sound, the expected minimum life in terms of skid and deformation resistance is likely to be exceeded.

8.4 The most onerous conditions occur typically during the summer months on heavily-trafficked, exposed carriageways with significant gradients in cuttings and on the surface of the pavements carried by elevated structures. In these situations, surface temperatures can approach or even exceed 50°C. Should surface temperatures exceed this figure for prolonged periods (such as in an exceptionally hot summer), the expected minimum life of the system in the wheel track zone may not be attained.

Installation

9 General

9.1 Installation of the Magma Thermaband R172 Preformed Overbanding System must be conducted in accordance with the Certificate holder's Installation Method Statement and this Certificate.

9.2 Traffic management must be in accordance with the latest issue of the *Department of Transport Traffic Signs Manual*, Chapter 8, or as agreed between the purchaser and installer.

9.3 The ambient and road surface temperatures are recorded at the start and, if the weather is variable, during the installation process. Installation must only be carried out if the road surface temperature is ≥1°C.

9.4 The system must not be installed during periods of continuous or heavy rain (see section 10.2).

9.5 The areas to which the system is to be applied must be clearly defined by the purchaser prior to commencement of work on site.

10 Preparation of the road surface

10.1 The surface must be sound and clean, and free from grease, oil, rust, scale, dirt, or any other substances that might affect adhesion or performance. This can be done by using a hard brush or high-pressure water jet, or by mechanical grinding.

10.2 The area to be treated, including down the cracks, must be dried thoroughly using a gas burner to make sure it is completely free from moisture before installation commences. When a primer is needed, the surface must have cooled prior to applying the primer.

11 Application

11.1 On non-bituminous surfaces, a primer/sealer is applied to the entire surface of the repair and allowed to dry until it is tack-free. The primer must be applied and allowed to dry in accordance with the manufacturers/suppliers application instructions.

11.2 At low temperatures, rolled material is placed on the surface and warmed slightly, allowing it to be unrolled without breaking.

11.3 The overbanding tape is unrolled or laid onto the road surface with the 'beaded' topcoat facing upwards, positioned correctly over the centre of the crack. It must then be cut to the required size and shape.

11.4 The tape is heated using a gas burner. The flame is moved slowly but steadily above the system to ensure that heat is evenly applied.

11.5 Sufficient heat has been applied when:

- the entire surface of the material is liquid and has started to bubble and melt
- the edges of the material have sealed against the road surface
- individual pieces or joints have fused together into one.

11.6 The system will cool down and harden typically ≤5 minutes after the heat source is removed. The cure time will be affected by the prevailing ambient conditions.

11.7 Once the system has cooled sufficiently, visual inspection must be carried out by the installer to check the finished levels and bond to substrate, or for any faults. Bond to substrate can be verified by trying to peel up the edges with a chisel or knife. If it can be lifted, reheat the system until adequate bonding has occurred. This is achieved by repeating the application steps listed in sections 11.1 to 11.6. Always check that a sufficient seal has been made along the length of the entire overbanding and surface, as any delay in completing the seal could result in moisture becoming trapped beneath it, rendering subsequent attempts to reseal it unsuccessful.

11.8 Difficulties may be experienced when applying thermoplastic overbanding to newly laid cementitious surfaces due to the presence of moisture, salts, alkalis, pigments and other additives. Ideally these surfaces should be fully cured before application is conducted.

12 Repair

In the event of damage occurring during service, the system can be repaired by repeating the preparation and application procedure. If the overbanding needs to be removed, apply heat directly with a gas torch to burn off, and use a scraper to remove any residue.

Technical Investigations

13 Tests

13.1 Laboratory performance tests were carried out on the Magma Thermaband R172 Preformed Overbanding System in accordance with the requirements of the Guidelines Document, the results of which were satisfactory.

13.2 Characterisation tests were carried out, including infra-red analysis, softening point, density, ignition loss and tensile strength/elongation of the binder component.

13.3 The tests and requirements are given in Table 1.

Table 1 Laboratory performance tests on the system

Test	Requirement(1)	Method(2)
Skid resistance value (SRV)		
initial	≥60	Appendix A, Method 1
retention(3)	≥50	Appendix A, Method 1
Tensile bond ($N \cdot mm^{-2}$)(4)		
control	≥0.5	TRL Report 176, Appendix J
heat aged(5)	≥60% of control value	TRL Report 176, Appendix J
Wheel tracking at 60°C		
spread after wheel tracking (mm)	Record value	Appendix A, Method 2
deformation after wheel tracking (mm)	Record value	Appendix A, Method 2

(1) Requirements as defined in the Guidelines Document.
(2) Test methods are defined in Appendix A of the Guidelines Document.
(3) Conducted after the wheel tracking at 60°C.
(4) Conducted on both asphalt and concrete substrates.
(5) Heat aged for 28 days at 70 ±2°C.

14 Investigations

14.1 An installation trial was carried out to assess the practicability of the installation in accordance with the Certificate holder's procedures. An assessment of the results of SRV tests carried out on the installation was satisfactory.

14.2 A user/specifier survey and visits to existing sites were carried out to assess the system's performance and durability.

14.3 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

Manual of Contract Documents for Highway Works, Volume 1 *Specification for Highway Works,* Series 700, clause 711 *Overbanding and Inlaid Crack Sealing Systems*, February 2016

Manual of Contract Documents for Highway Works, Volume 2 *Notes for Guidance on the Specification for Highway Works,* Series NG700, clause NG711 *Overbanding and Inlaid Crack Sealing Systems,* February 2016

TRL Report 176 : 1997 *Laboratory tests on high-friction surfaces for highways*

Guidelines Document for the Assessment and Certification of Crack Sealing Systems for Highways, October 2010

15 Conditions

15.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

15.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

15.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

15.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

15.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

15.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk